AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1.-12. (CANCELLED)

13. (currently amended) A method for preparing a membrane to be assembled in a membrane electrode assembly, comprising steps of:

swelling an ion-conducting membrane by subjecting to a liquid containing at least one solvent and an ionically conducting polymer (hereinafter called ionomer) or to an atmosphere containing the vapor phase of at least one solvent and an ionomer by controlling the content of the solvent in the ion conducting membrane, thereby impregnating the ion conduction membrane with the ionomer;

after the swelling step, drying the ion-conducting membrane at elevated temperatures ~~in the range from 120 to 140 °C~~ in order to remove residual solvent and to transform the ionomer into the form of an insoluble solid; and

after the drying step, re-swelling the ion-conducting membrane by immersing the ion-conducting membrane in a solvent;

wherein the ion conducting membrane is coated with an ionically conducting polymeric phase.

14. (previously presented) The method according to claim 13, wherein the ion conducting membrane is a radiation grafted membrane.

15. (previously presented) The method according to claim 14, wherein the graft level is in the range of 5 to 50 mol%.

16. (previously presented) The method according to claim 14, wherein the grafting solution comprises a crosslinker monomer; the content of said crosslinker monomer is in the range of 5 to 25% relative to styrene.

17. (previously presented) The method according to claim 13, wherein prior to the swelling step,

a) the ion conducting membrane is treated in a strong acid solution for a period in the range of 10 minutes to 120 minutes; and

b) rinsing the treated ion conducting membrane with water, until the rinse water is neutral.

18. (canceled)

19. (previously presented) The method according to claim 15, wherein the grafting solution comprises a crosslinker monomer; and

the content of said crosslinker monomer is in the range of 5 to 25% relative to styrene.

20. (previously presented) The method according to claim 14, wherein prior to the swelling step,

a) the ion conducting membrane is treated in a strong acid solution for a period in the range of 10 minutes to 120 minutes; and

b) rinsing the treated ion conducting membrane with water until the rinse water is neutral.

21. (currently amended) A method for manufacturing a membrane electrode assembly using an ion conducting membrane, comprising the steps of:

providing an ion conducting membrane in a pre-swollen state being impregnated with a ionomer;

after the swelling step, drying the ion-conducting membrane at elevated temperatures ~~in the range from 120 to 140 °C~~ in order to remove residual solvent and to transform the ionomer into the form of an insoluble solid;

after the drying step, re-swelling the ion-conducting membrane by immersing the ion-conducting membrane in a solvent;

coating of the ion conducting membrane on both sides with an electrode layer to form a sandwich; and

hot-pressing the sandwich to form an ion conducting bond between the ion-conducting membrane and the electrode layers;

wherein the ion conducting membrane is impregnated with an ionically conducting polymeric phase.

22. (previously presented) The method according to claim 21, wherein a catalytic active layer is disposed between the electrode layer and the ion conducting membrane on both sides of the ion conducting membrane.

23. (previously presented) The method according to claim 21, wherein the electrode layer comprises one of a carbon cloth, carbon paper and a carbon felt.

24. (previously presented) The method according to claim 21, wherein the hot-pressing condition are selected from at least one of the following conditions:

a) temperature in the range of 70 to150 C;

b) pressure in the range of 2 to 30 MPa; and

c) duration time of hot-pressing treatment in the range of 15 to 400 seconds.

25.(previously presented) The method according to claim 21, wherein the catalytic active layer comprises at least one selected from the group containing platinum, ruthenium, rhodium, rhenium, nickel, rare earth and transition metals and compounds thereof.

26. (previously presented) A membrane electrode assembly, manufactured according to claim 21, comprising a hot pressed sandwich comprising:

a first electrode layer;

a second electrode layer; and

an ion conducting membrane disposed between the first and second electrode layers;

wherein the ion conducting membrane in a pre-swollen status prior to the hot-pressing.

27. (previously presented) The membrane electrode assembly according to claim 26, wherein the depth of the ion conducting membrane is in the range of 5 to 250μm .

28. (previously presented) Method according to claim 22, wherein the electrode layer comprises one of carbon cloth, carbon paper and a carbon felt.

29. (previously presented) A method according to claim 14, wherein the graft level is in the range of 10 to 40 mol%.

30. (canceled).

31. (previously presented) A method according to claim 15, wherein the grafting solution comprises a crosslinker monomer, and

the content of said crosslinker monomer is in less than 20% relative to styrene.

32. (previously presented) A method according to claim 21, wherein the ion conducting membrane is a polar and hydrogen-bonding solvent.

33. (previously presented) A method according to claim 21, wherein the hot-pressing conditions are selected from at least one of the following conditions:

a) temperature in the range of 90 to 120 °C;
b) pressure in the range of 5 to 18 MPa; and
c) duration time of the hot-pressing treatment in the range of 60 to 240 seconds.

34. (previously presented) A membrane electrode assembly according to claim 26, wherein a depth of the ion conducting membrane is in the range of 20 to 200 μm.

35. (previously presented) A method according to claim 22, wherein the electrode layer is a polar and hydrogen-bonding solvent.

36. (previously presented) A method according to claim 14, wherein the grafting solution comprises a crosslinker monomer, and

the content of said crosslinker monomer is in the range of less than 20% relative to styrene.

37. (previously presented) A method for manufacturing a membrane electrode assembly using an ion conducting membrane, comprising steps of:

swelling the ion-conducting membrane by immersing the ion-conducting membrane in an ionomer solution;

after the swelling step, drying the ion-conducting membrane at elevated temperatures in a range from 120 to 140 °C so as to transform the ionomer into a form of an insoluble solid, and so that the ion conducting membrane is impregnated with an ionically conducting polymeric phase;

after the drying step, re-swelling the ion-conducting membrane by immersing the ion-conducting membrane in a solvent;

coating the ion conducting membrane on both sides with an electrode layer to form a sandwich; and

hot-pressing the sandwich to form an ion conducting bond between the ion-conducting membrane and the electrode layers.

38. (previously presented) The method of claim 37, wherein the hot-pressing step is performed while the ion-

conducting membrane is still in a wet state from the re-swelling step.